Measurement of individual social capital

Gaag, Martin Pieter Johannes van der

Chapter 8

Name Generators as resource items

8.1 Introduction

In Chapter 5, the Name Generator/interpreter instrument was used to construct social capital measures mainly based on information about network relationships and alter characteristics. In addition, the Name Generator questions offer some opportunities to investigate information referring specifically to potential exchanges of social resources.

Usually, information about embedded social resources comes from the 'name interpretation' part of the interview procedure used for this measurement instrument (see Section 5.1.1). The Name Generator questions also contain information about social resources however, since most of them refer to specific exchanges. Each single Name Generator represents exchanges accessed by an individual when at least one alter is mentioned in response to the question. For example, when at least one alter is mentioned in response to the item "if you are busy with an odd job at home, whom do you ask for help?", possible exchanges of a form of instant instrumental assistance is applied; similarly, access to emotional support is implied by positive responses to the item "with whom did you discuss important personal matters during the last six months?". For some items included in the SSND set of Name Generators it is more difficult to specify which kind of resources are represented exactly; the use of Name Generator items as social capital indicators can therefore be limited.

In this chapter it is analysed to what extent the SSND Name Generators can serve as social resource representing items, similar to the investigations in Chapters 6 and 7. Since many datasets have already been collected on the basis of Name Generators, investigations in this fashion may offer opportunities for the reconsideration of older social network data as indications of social capital.

8.2 Overall distribution

In Table 8.1 the Name Generators introduced in Section 5.1.4 are reproduced, but this time with their overall distributions as measurement items (see also Table 5.1). Not all Name Generator items are compatible with the perspective on social capital measurement presented in Chapter 1. Item 3 does not refer to access to positive social resources, but sour social capital or social liabilities (see also Section 1.3.2). Some items apply to wage-

earners only (items 1, 2a/b, 3, 4, 5) and do not measure social capital in the *general* population. Other items (1, 6) refer to mobilised, and not merely accessed social capital. One question refers to resources of the respondent (item 2b), and two questions refer to role relationships, and not social resources in particular (5, 9). For item (5) "may I have the name of your boss?", we can assume that such an item will refer to the power of an authority position, and probably collections of personal resources that are larger than those of the respondent. However, a more exact interpretation is not very well possible, especially since the question does not by definition refer to a positive relationship. Similar reservations are appropriate for the relationship with neighbours (item 9). Therefore, it is better to consider positive responses to these Name Generators more carefully, and see them as referring more to 'the presence of exchange relationships' in general.

Table 8.1: Responses to Name Generators as items (Survey on the Social Networks of the Dutch (1999-2000); N=1,004, weighed).

		% 'yes'[1]	*if yes, access through*		
	"Do you know anyone who..."		acquaintance	friend	family member
1	helped you get your current job	27	62	10	29
2a	gives advice on problems at work	68	83	5	12
2b	you give advice regarding problems at work	59	82	8	10
3	causes difficulties while doing your work	24	99	0	1
4	you work together with often	65	88	5	7
5	is your boss	64	97	1	2
6	helped you get this house	30	40	16	44
7	helps you with small jobs around the house	89	20	16	65
8	keeps a spare key to your house	78	25	9	66
9	is your direct neighbour	86	86	6	8
10	you go to for social visits	94	4	26	70
11	you talk to about important matters	86	5	24	72
12	is important to you but was not mentioned earlier	48	6	35	59
	average	65	54	12	33

[1] Answers to all Name Generators (see Chapter 5) are recoded into (0) 'no person at all' or (1) 'at least one alter, through any relationship (see text).

8.2.1 Initial distribution of responses

In order to present and analyse univariate distributions of the Name Generator questions similar to those of the Position Generator (Table 6.1) and Resource Generator (Table 7.1), the 15 original relationship categories distinguished for relationships with alters (Table 5.2) are recoded. The recoding is based on the relative tie strengths of the various role relationships found in Section 5.2.2. Partners, children, parents, parents-in-law, siblings, and other family members are coded as 'family members'; the category 'friends' only included relationships originally also listed as 'friends'; bosses, colleagues, employees, neighbours

and other people from the neighbourhood, people known from clubs, and acquaintances are recoded as 'acquaintances'.

It is clear that almost all work-connected relationships are listed as 'acquaintances'; the same is true for a large majority of the relationships with neighbours (Table 8.1). Helpers to get the current job and house, truly instrumental social capital relationships, are also associated with weaker relationships; however, in 37% and 58% of the cases, respectively, these contacts are a friend or a family member. Relationships connected to the home domain – help with small jobs, and keeping spare keys to the house – are dominated by strong ties. Although family members still form a majority in these groups, 'friends' are clearly important relationships associated with social visits, and talking about important matters (Table 8.1).[1]

8.3 Construction of measures

The construction of measures from Name Generator items can also be performed by using a deductive basis (Section 8.3.1), or using inductive methods (Sections 7.2.2–7.2.4). For each of these analyses, responses to Name Generators are coded in a binary fashion, to make the results comparable with the analyses in Chapters 6 and 7: access to 'at least one person, through any relationship' is coded 1, and 'no person at all' is coded 0. Because item 3 explicitly refers to sour social capital, it is omitted from all analyses in this chapter.

8.3.1 Deduction

A deductive measure for general access to social capital can directly be constructed from the SSND Name Generators, by taking the sum score of items in response to which at least *one* alter is mentioned, through any relationship (excluding item 3). This measure is similar to single diversity measures calculated from Position Generator and Resource Generator data (see Sections 6.2.1 and 7.2.1), and labelled 'exchange relationship diversity'.

8.3.2 Inductive cluster analysis

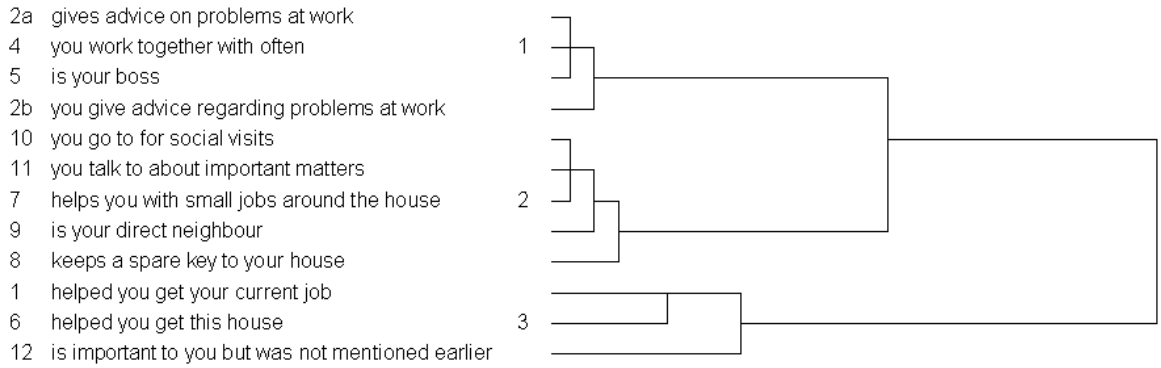
To explore and identify latent traits in the SSND sets of Name Generators three different techniques are used: cluster analysis, unfolding scale analysis, and cumulative scale analysis.

All items (except item 3) are dichotomised and entered into an hierarchical cluster analysis, with binary Euclidean distance D^2 as calculation method, and Ward's distance as separation criterion (see section 4.2.1). In Figure 8.1, the order of cluster separation is shown. On the right hand side of the figure, one cluster includes all 12 items. When this dendrogram is followed to the left hand side, this cluster separates several times, until each cluster only contains one single item. There is a clear separation into three clusters.

Cluster 1 contains all items connected to relationships frequently encountered in the work domain (items 2a, 4, 5, and 2b, Figure 8.1). Interestingly, the single item that refers

[1] More detailed responses to single Name Generators in terms of role relationships are presented in the Appendix, Table 5.

Figure 8.1: Hierarchical cluster dendrogram of Name Generator items, based on squared Euclidean distance and Ward method of cluster separation (Survey on the Social Networks of the Dutch (1999-2000)).



to personal and not social resources, item 2b, is indeed separate from the other items in this third cluster. By contrast, cluster 2 refers to social exchanges in the private domain, and contains items 10, 11, 7, 9, and 8. The items in this cluster all apply to strong, intimate relationships, judging by their content (e.g. "someone you go to for social visits" and "someone you talk to about important matters"). A third cluster (3) shows a greater 'distance' to the other two clusters, and includes the items 1, 6, and 12. It contains the two typical instrumental social capital items, getting a job (item 1) and getting the current home (6), and also the 'odd' item "other person important to you" (item 12).[2] The fact that responses to the single items within this third cluster are also less related to one another (compared to the other clusters) shows that asking for used relationships in terms of social capital is different from merely accessing relationships.

8.3.3 Inductive unfolding scale analysis

An exploration with the unfolding scale model means polarisation in a set of items in terms of opposite qualities on a bipolar scale. The unfolding scale method groups items as 'similar' on a continuum that is to be identified by the researcher (see Section 4.2.4). Observing the largest differences in content between all 13 SSND Name Generators, a bipolar continuum could be conceived of for these with items referring to exchanges in the home domain on one end, and items referring to exchanges the work domain on the other end.

One of the two main requirements for scaling analyses (see 4.2.5) is met for the SSND set of Name Generators: there is sufficient variability in popularity. The other is more problematic: the popularities of some of the items are very high (items 7, 9, 10, and 11; see Table 8.1), which may cause distortions in the results (see 4.2.5). When the

[2]Relationships elicited by this question are mostly friends (36%); other responses include siblings (16%), children (12%), parents (11%), other family members (8%), partners (6%), parents in law (3%), acquaintances (3%), fellow club members (2%), and colleagues (1%). Therefore, its inclusion into the third cluster, which contains much weaker exchange relationships, is somewhat remarkable.

13 items are entered into the MUDFOLD programme with scalability threshold values H_{ijk}=0.00 and H_i=0.30, no best triplet of items can be identified to start scale building. Therefore, no unfolding scale can be identified for this set of items.

8.3.4 Inductive cumulative scale analysis

For cumulative scale analyses, the same requirements as for unfolding scale analyses apply. The high popularities of some of the items (items 7, 9, 10, and 11; see Table 8.1) again may cause distortions in the results (see 4.2.5). Since the number of items to be investigated is also quite small, the full set of items is nevertheless entered into the analysis.

The 12 Name Generators do not form a single cumulative scale: when forced into a single dimension this has a poor scale homogeneity value (H=0.27). When entered into the search procedure of the MSP programme with default inclusion criteria (a threshold homogeneity value H_{ij}=0.30), an analysis of the 12-item set resulted in one cumulative scale of 8 items (Table 8.2). This scale has a good homogeneity and high reliability; four items are not included in this scale (items 6, 7, 8, 9, and 12). The single items in the scale show a wide range in homogeneity value H_i between 0.32 and 0.70; this suggests that this first scale may consist of one or more subscales with higher scale homogeneity values. The scale search procedure was therefore repeated with a higher threshold value of 0.35 for H_{ij} (see section 4.2.3). This resulted in one 6-item scale labelled 1', showing strong homogeneity and high reliability, and one item pair labelled 2, with strong homogeneity and poor reliability (Table 8.2; lower half). Scales 1' and 2 clearly refer to social exchanges in the work and home domain, respectively. Since only scale 1' contained enough items to show a sufficient reliability, this is the only scale used; its internal correlation pattern shows that all items included are positively correlated (Table 8.3). In subsequent analyses, this scale is labelled 'work exchange relationships'.

8.4 Comparison of measures

In this section, the distribution characteristics and interrelationship between the two measures constructed from the Name Generators-as-items-method are evaluated.

8.4.1 Distributions

The distributions of the two measures constructed from Name Generator items are shown in Table 8.4 and Figures 8.2–8.3. The average value on the newly constructed deductive measure 'exchange relationship diversity' is eight items; the average score on the inductively constructed subscale 'work exchange relationships' is three items (Table 8.4). The distributions of both measures are negatively skewed. For the inductive scale, the large number of responses with value '0' can be explained by the large number of respondents that do not have a job, and therefore did not mention any alter in response to these questions.

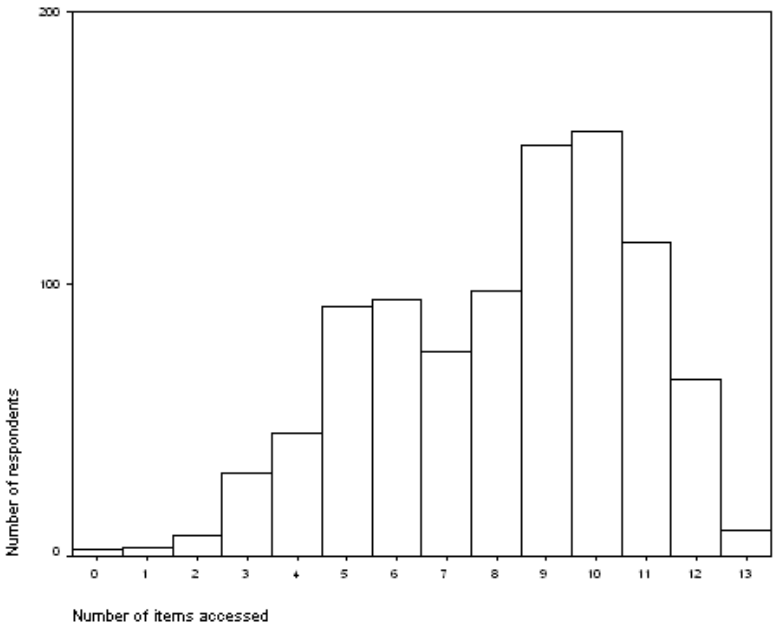


Figure 8.2: Distribution of number of Name Generator items accessed: exchange relationship diversity (Survey on the Social Networks of the Dutch (1999-2000); N=1,004, weighed).

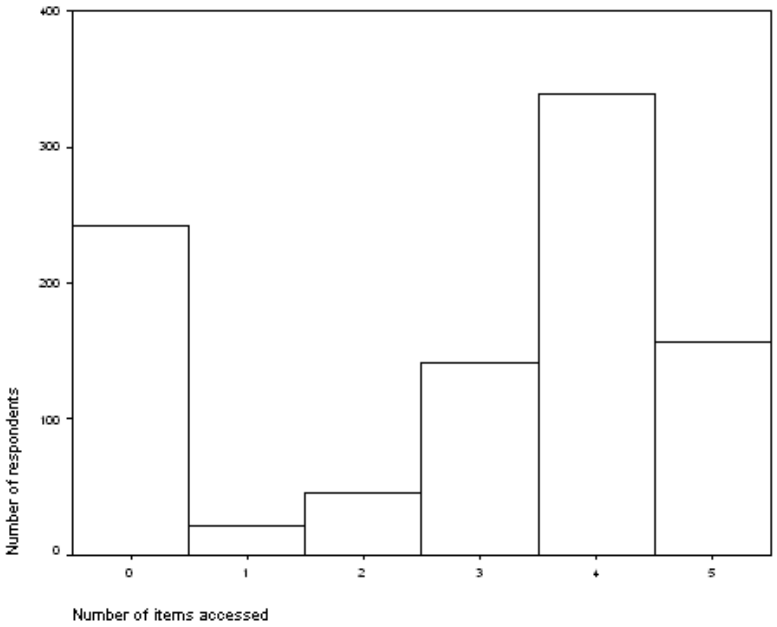


Figure 8.3: Distribution of cumulative scale in Name Generator items: work exchange relationships (Survey on the Social Networks of the Dutch (1999-2000); N=1,004, weighed).

Table 8.2: First and second cumulative scale search procedure with Name Generator items, with threshold homogeneity values H_{ij}=0.30 and H_{ij}=0.35 (Survey on the Social Networks of the Dutch (1999-2000); N=835).

item #	*%'yes'*	*"Do you know anyone who..."*	H_i
First scale search procedure, with H_{ij}=0.30			
Scale 1 (H=0.57, *rho*=0.82)			
1	27	helped get your job	0.51
2b	65	you give advice regarding work	0.61
5	68	is your boss	0.59
4	71	you work together with often	0.66
2a	73	can give you work advice	0.69
11	87	you talk to important matters	0.31
10	94	you go to for social visits	0.30
Second scale search procedure, with H_{ij}=0.35			
Scale 1' (H=0.69, *rho*=0.84)			
		"work exchange relationships"	
1	27	help get your job	0.55
2b	65	you give advice regarding work	0.66
5	68	is your boss	0.66
4	71	you work together with often	0.73
2a	73	gives you advice regarding work	0.77
Scale 2 (H=0.51, *rho*=0.34)			
12	49	is important to you but was not mentioned earlier	
10	94	you go to for social visits	0.52

8.4.2 Correlations

Since 'work exchange relationships' is a subscale of the total 'exchange relationship diversity', the two scales are highly correlated (r=0.86; $p \leq$0.001).[3] In Table 8.5, correlations of these measures are shown with all other measures constructed from Name Generator data in Chapter 5. The total network size calculated in Chapter 5 is a direct function of the combined responses to the single Name Generators (see Table 5.1, column 3). Therefore, substantial correlation exists between network size and 'exchange relationship diversity' – the total number of Name Generators accessed (see Table 8.5). Network diversity of gender, education, and religion are also all positively, but weakly correlated to 'exchange relationship diversity' and (hence) work exchange relationships. These correlation coeffi-

[3]When corrected for attenuation, this value becomes r=1.23 (see Section 4.2.6).

Table 8.3: Correlations between scale items in cumulative social capital measure constructed from Name Generators (Survey on the Social Networks of the Dutch (1999-2000); N=1,004).

"Do you know anyone who..."		*work relationship diversity*			
item #		1	2b	5	4
1	helped yo get your job	**1.00**			
2b	you give advice to regarding work	**.20**	**1.00**		
5	is your boss	**.20**	**.51**	**1.00**	
4	you work together with often	**.24**	**.63**	**.71**	**1.00**
2a	gives you advice regarding work	**.26**	**.68**	**.67**	**.72**

Pearson correlations in bold $p \leq .01$.

Table 8.4: Scale characteristics of social capital measures from Name Generator items (Survey on the Social Networks of the Dutch (1999-2000)).

deductive measure	H[1]	*rel.*[2]	*min*	*max*	*mean*	*st.dev*	*skewness*
exchange relationship diversity	-	0.61	0	12	8.22	2.31	-0.76
inductive measure							
work related exchanges		0.84	0	5	3.06	1.75	-0.83

[1] Loevinger's scale homogeneity coefficient.
[2] Scale reliability measure; Cronbach's α for exchange relationshop diversity, *rho* for work related exchanges.

cients also show that networks with more different exchange relationships indeed also show a larger diversity in alter characteristics, and a larger variation in tie strength. However, networks with more different exchange relationships show a lower diversity. Finally, while in Chapter 5 it was found that networks with a lower density are larger, Table 8.5 shows that these networks also include more different exchange relationships. Summarised, larger networks have a more open structure and include more diverse people.

8.4.3 Distributions over subgroups

To investigate how both exchange relationship diversity measures are distributed over the population, OLS regressions are performed. These show considerate fractions of explained variance ($R^2 \geq 0.39$), which means they are not completely independent of respondents' sociodemographic group membership. Therefore, they are less suitable indicators of social capital than other measures discussed in earlier chapters. Since 5 of the 12 analysed Name Generator questions refer to the work domain, it is logical that on average, homemakers report alters to four items less for the sumscale, and to two items less on the work

Table 8.5: Correlations between social capital network measures from Chapter 5 and measures from Name Generator items (Survey on the Social Networks of the Dutch (1999-2000); N=1,004).

measure	exchange relationship diversity	work exchange relationships
network size	**.65**	**.53**
gender diversity (IQV)	**.18**	.05
education diversity (IQV)	**.16**	**.10**
age diversity (σ)	-.06	**-.13**
tie strength diversity (σ)	**.28**	**.27**
network density	**-.20**	**-.25**

Pearson correlations in bold $p \leq .01$.

exchange relationship-measure: these respondents do not have colleagues or supervisors by definition. However, respondents in education, pensioned or otherwise off the labour market do not indicate access to significantly lower numbers of exchange relationships. Explanations may be that those in education may also have a job (or, alternatively, consider education as their job) and furthermore unemployed, pensioned respondents and those unfit for work may still count network members to be their colleagues or bosses, even though they do not currently have a job. The only other significant effect is a small age effect.

8.5 Interpretation

The analyses in this chapter showed that different Name Generators lead to the elicitation of specific collections of relationships, which in turn may possibly identify specific sets of social resources embedded in these relationships.

Questions asking about alters with whom emotional support and companionship are exchanged, or who are simply 'important' to ego elicit mainly relationships with friends (although family relationships are also important in this respect). Questions asking who are providers of potential help when homes and jobs have to be found, or when smaller instrumental favours need to be exchanged (small jobs and keys to be kept) more often elicit alters who are family members. When questions explicitly refer to role relationships in the work and neighbourhood domain, mainly relationships labelled as 'acquaintances' are found. These findings emphasise that the type of questions included in sets of Name Generators literally sets the boundaries to the social networks retrieved, and hence also to the social capital that may be identified with such questions (see also Section 5.1.2).

A comparison between Name Generator measures discussed in Chapter 5, and those discussed in the current Chapter shows that the extensity of social networks is positively correlated to its diversity. In Chapter 5 it was already shown that larger networks show more variation in alter characteristics (see Table 5.6). In the current Chapter it is also

shown that larger networks consist of more different exchange relationships, which bring individuals into contact with more different others. However, there is one exception. Social networks with more different exchange relationships also show smaller variations in ages of network members. Possibly, this can be explained by the presence of individuals for which the nuclear family takes up a large part of their total social network: family relationships are more likely to show larger variations in age (especially when they include both grandparents and infants, for example) than relationships with friends and acquaintances. This idea is supported by findings in Chapter 5, where also higher densities are found for networks with larger age differences and smaller differences in tie strength; since transitivity is high among family members, these correlations could also point to a larger fraction of family members in networks with large age diversity. There is also a negative relationship between network age diversity and 'work exchange relationships', which implies that individuals who mainly maintain relationships via the work domain maintain relationships with more alters of the same age.

In Chapter 5 it was shown that larger networks have lower density, and show less diversity of tie strengths to alters. In this chapter, networks with lower density also show more diverse exchange relationships, both in general and specifically those at work. These correlations emphasise the overall positive relationships between network size, diversity of contacts, and openness. Methodologically, the results from this chapter also imply that a simple social capital measure that counts the number of accessed exchange relationships could also summarise some aspects of network openness and diversity. Since these are both considered advantageous characteristics of social capital, this would be an attractive, low-cost method to construct a single social capital measure from Name Generated data. However, this is not useful without an answer to the next question, namely whether such networks also give access to more diverse social resources. This issue will be addressed with the cross-model comparisons in Chapter 9.

Cluster analyses showed, roughly, that relationships are independently formed in three different domains. First, the private domain, where various instrumental as well as more emotional, expressive exchanges take place. Second, the work domain, which only includes relationships on the work floor. Third, a less pronounced domain containing various contexts to exchanges with social relationships. The cumulative scaling analyses indicated that the exchange relationships in the work domain form the strongest subdimension. A set of items forming a second subdomain referring to exchanges with more emotionally close network members showed lower reliability, but the homogeneity of this set suggest that when more different Name Generators referring to this domain would have been included in the questionnaire, the analyses could have resulted in a social capital measure similar to the one identifying social support in Resource Generator items (see Chapter 7).

Since the subscale referring to the exchanges in the work domain has a cumulative character, it also identifies hierarchical relationships in the access to several exchange relationships. The least popular Name Generator in this subscale is "knowing someone who helped get the current job". Because of the cumulative character of the scale, a positive answer to this item also implies knowing alters that comply to all other Name Generators included in the scale – knowing someone who is being given advice, having a boss, someone one works together with often, and someone who gives advice. For the current set of items, this is a plausible yet unsurprising relationship. With a larger number of more specific and more detailed items, such cumulative effects may be more illuminating. In addition,

the use of dichotomous responses to the Name Generators in this chapter obscures the extent to which these cumulative relationships result from knowing different alters (who subsequently give access to alters in other exchange relationships), or one and the same multiplex alter, who is at the same time boss, advice-giver, being given advice to, etc. Such more detailed questions could be the subject of further studies of the multifunctionality and multiplexity of network members.

Table 8.6: Regressions on Name Generator social capital measures for demographic subgroups ((Survey on the Social Networks of the Dutch (1999-2000); N=752).

	# exchange relationships			*work exchange relationships*		
	B	*beta*	*p*	*B*	*beta*	*p*
constant	9.49		≤.001	2.57		.021
sex (1 = male)	-.18	-.04	.246	.01	.00	.948
age/10	.36	.17	.495	**.96**	**.54**	.012
age/10, squared	-.06	-.27	.302	**-.13**	**-.67**	.002
education[1]						
primary	**-.46**	**-.09**	.012	-.21	-.05	.112
tertiary	.17	.04	.348	.15	.04	.227
labour market position[2]						
in education	**-.96**	**-.07**	.028	**-1.14**	**-.09**	≤.001
home maker	**-3.67**	**-.43**	≤.001	**-3.67**	**-.50**	≤.001
off labour market	**-2.79**	**-.34**	≤.001	**-2.88**	**-.42**	≤.001
unemployed	**-2.64**	**-.19**	≤.001	**-2.77**	**-.23**	≤.001
resp. has partner (1 = yes)	**.41**	**.08**	.020	.16	.04	.199
household size	**-.17**	**-.11**	.002	**-.11**	**-.08**	.006
income (log)	-.27	-.03	.441	-.04	.00	.880
prestige[3]	.01	.05	.129	.01	.05	.106
R^2		.40			.56	
R^2_{adj}		.39			.56	
d.f.		13/755			13/755	
F		38.410			75.264	
p		≤.001			≤.001	

Bold coefficients significant $p \leq .05$.
[1] Reference group: secondary education.
[2] Reference group: wage-earners.
[3] Indicated with Sixma and Ultee's 1992 measure for occupational prestige (Bakker et al, 1997).